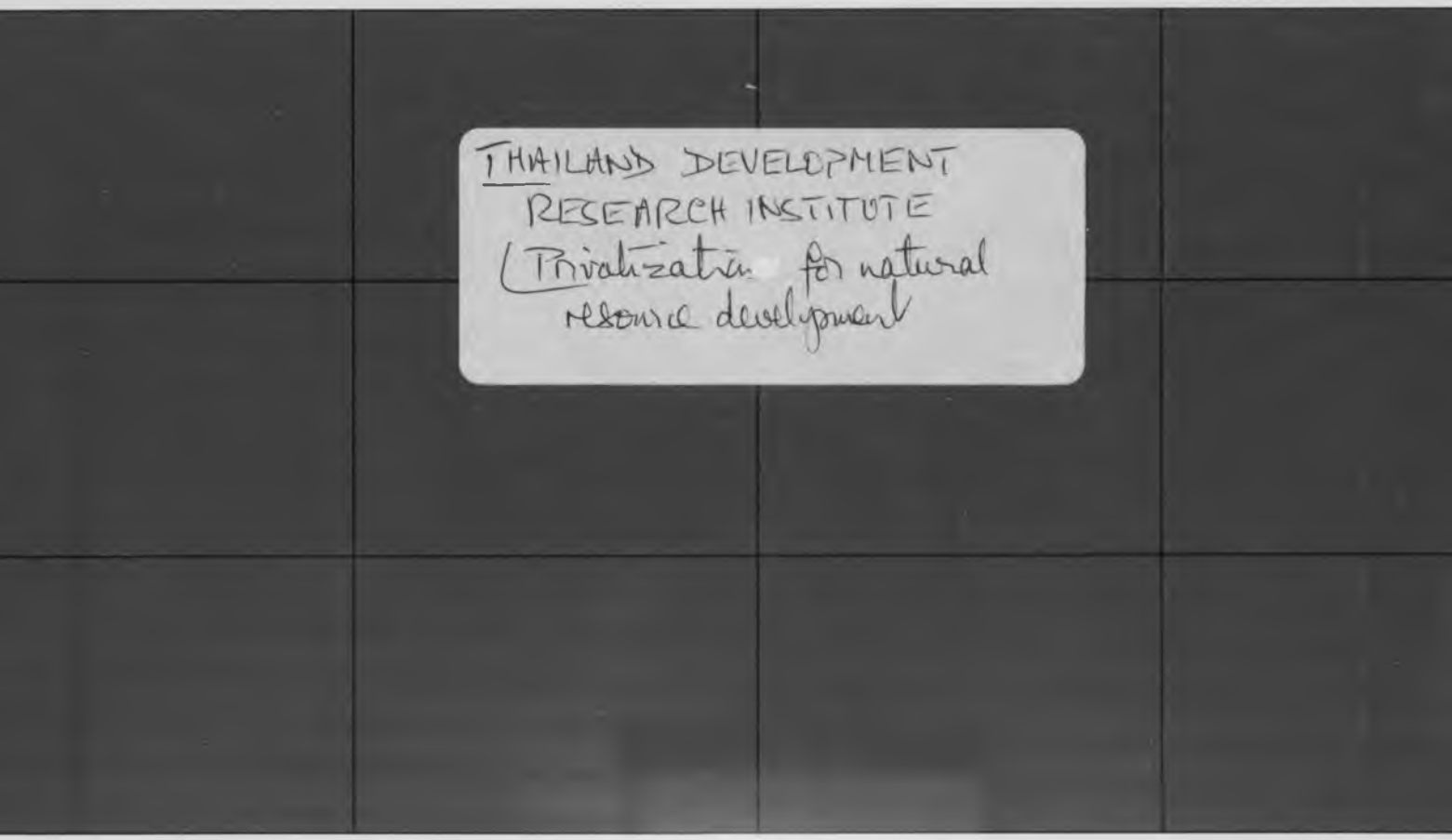
Privatizations for Natural Resource Development



Thailand Development Research Institute Foundation

Workshop on

"TDRI Research Activities Supported by the EPD II Projec

October 7-8, 1989, at Novotel Suriwongse Hotel, Chiang Mai

Report on

PRIVATIZATION FOR NATURAL RESOURCE DEVELOPMENT

Thailand Development Research Institute

Privatization for Natural Resources Development

I. Project Period : 2 years, September 1988 - August 1990

II. Budget : 4,195,540 Baht for 1st year

4,277,520 Baht for 2nd year

total 8,473,060 Baht

III. Objective

To determine the appropriate role of the private sector in the management of natural resources of Thailand and in the rehabilitation of degraded environmental quality of the country. The study will also emphasize the understanding of the ways and means to induce private investment in natural resources development and in environmental enhancement activities.

IV. Role of Private Sector in Natural Resources and Environmental Management

The private sector's role in the development of Thailand's natural resources has been a rather exploitative one to date. In the past, Government had strictly confined the private sector's role to extractive-type concessions, geographical areas delimited by Government were in essence mined for their natural resource content, be it minerals or forests. Such effort has not resulted in a rational, sustainable development programs for Thailand's abundant but finite natural resources.

The role of the private sector in the economic development is obvious. From electronic factories to agro-industries, private sector has contributed much to the success of Thailand in the world's markets. The private sector's available financial resources, willingness to take business risks, accountability, and the generally flexible and active management style are some of the reasons for its success.

While the private sector has contributed considerably to Thailand's well-being, it is also the culprit attributing to many of the environmental problems now facing the Kingdom. On many occasions, environmental degradation occurred through simple ignorance of the consequences of various industrial activities. Other cases, however, involved the deliberate neglect of clearly visible problems.

With more demand on our limited natural resources and environment, the general public is becoming more sensitized to

environmental issues. Means must be explored to involve all potential partners to make full but judicious use of the Kingdom's natural resources. The private sector's potential role is clear. What remains is the fleshing out of this potential to specific long-range action plans. A balance to allow the successful continuance of Thailand's development with the added constraints of maintaining Thailand's environmental quality.

It is thus well-recognized by Government that it alone can not succeed. Government has adopted a policy of inviting the private sector to invest in resources development, particularly renewable resources. Take forest resource, for example, reforestation and the introduction of private forest plantations have been slow because of the long gestation period, high interest rates, the uncertain status of forest lands, and the inability of the forest owners to cash in on the economic benefits generated by their forest investments. High protection costs, insufficient funds, and lack of incentives have also limited public investment in forestry.

The pending general issue is thus how to induce the private sector to invest in natural resource development? What are the financial incentives necessary to initiate the investment process? What are the information and analyses needed so that commitment can be secured from investors? What are the policy options open to governmental authorities to promote a stronger role of the private sector in natural resources and environmental management commensurate with its recognized status in the economic development of the country?

In light of this, the NRE program has undertaken several research activities designed to explore these issues as well as to investigate new tools for resources management. These activities are detailed in the following section.

V. Past Activities

The outcome of NRE's activities under the EPD II project is a program for the enhancement of the private sector's role in natural resources development. These activities are grouped into three major categories: natural resource development, environmental quality management, and information system.

Natural Resource Development : Economic Forest

There exists a distinct interrelationship between population, resources, environment and development. Simply stated, population increase results in land pressure which leads to deforestation, degraded environmental quality and prevailing poverty from subsistant farming. The Thai Government has a policy which designates 25% of the Kingdom as "economic forest". In order to assess the viability of this policy, NRE undertook an examination of wood-related industries and private forest plantations -- specifically in terms of employment generation and their economic feasibility.

The economic forest study assesses employment in wood-related industries, establishes the profile of reforestation and analyses how upcoming reforestation programs could respond to population growth and potential employment generation. From the analysis conducted on secondary data obtained from various sources, the general conclusion is that forest plantation is not a labor-intensive undertaking. In terms of job creation, reforestation is likely to play a limited role, necessitating the

promotion of further processing activities. However, compared with investment in other annual crops, the forest business promises a reasonable return although the case applies more favorably to plantation owners than to independent farmers. Incentive schemes to encourage private investment are clearly needed.

In parallel to the economic study described above, and as a means to illustrate the application of information technology to the private sector, a Geographic Information system (GIS) case study has been carried out in six eastern provinces of Thailand to identify areas suitable for fast-growing tree plantations. An area of 5.6 million rai, within 250 km of the Laem Chabang port, was studied, the results show some 700,000 rai of land are potentially suitable for reforestation.

Out of the total area of 38.4 million rai needed to be reforested, private plantations to serve the increasing demands would require about 5 million rai, based on the increasing population and economic expansion. It is obvious that for the "economic forest" policy to be successful, it would require concerted effort not only from the private sector, but also depend on the continuing effort of various governmental agencies, and the public participation of the farmers themselves in reforestation programs. All three major parties - private sector, government and farmers are equally important to the success of the reforestation program in Thailand.

Environmental Quality Management - Risk Assessment

While Thailand's industry is expanding, the quality of the environment is put under pressure. Air and water pollution can result in decreased productivity and increased health care burdens. At present, a serious issue with dire consequences is the management of toxic wastes. This is yet another area where Government and private sector can join hands to solve the common problem of hazardous wastes management. The challenge is to turn waste management into a profitable enterprise so that its operation can rely on the efficiency of the market force, while conforming with standards set by the government for the well-being of the public. This clearly illustrates the interaction between private and public sectors -- the government promulgates regulations concerning the disposal of various toxic wastes generated by industry. The private sector, in turn, creates an opportunity for further industrial development through the establishment of an industry for the safe treatment and disposal of these wastes. The government's role is supervisory and regulatory, the private sector's role is implementation.

To facilitate such a complementary effort, a case study to determine an environmentally-safe and economically-viable industrial waste disposal site has been completed. This study examined an area of 3.2 million rai in Ratchaburi province for the purpose of locating a landfill site for sludge from the treatment process of the only toxic waste treatment center in the country, mainly for textile dyeing and electroplating wastes. An area in Chom Bung district of that province was selected as the

most appropriate landfill site. The analysis included such factors as soil permeability, ground water, proximity to human settlements and surface water supplies, inappropriate land uses such as rice paddy and forest, as well as the economic aspects of transportation and existing infrastructure. The risks of transporting treated industrial wastes to the disposal site were also examined using GIS and risk assessment technologies. This study was carried out in cooperation with the East-West Center, Argonne National Laboratory, and the Industrial Works Department (IWD). The findings of this study were presented at the Pacific Basin Conference on Hazardous Wastes, Singapore, April 1989. As a result, IWD has requested TDRI to undertake a similar study for the Eastern Seaboard region.

Information System- Development of a Database

One significant issue that has emerged in the course of NRE's research is the realization that there is a serious lack of basic information concerning Thailand's natural resources and environment. There exists no natural resources and environmental database to rival the more sophisticated socioeconomic databases such as those maintained at the National Statistics Office (NSO). The existing information is ad hoc, many times temporally incoherent and usually spatially inconsistent. This lack of data has been consistently cited by the private sector as one reason for its relative lack of involvement in natural resources development. In addition, information is often mentioned by Government planners as a critical element in the success or

failure of its development planning. One very important by-product of this project is therefore the development of a comprehensive, systematic, multi-purpose spatial database on natural resources and environment.

The technology selected was Geographic Information System (GIS). GIS is a digital mapping system in which spatial data such as soil, topography, slope, infrastructure, are digitized into a computer. Commercially available software can then overlay all the maps in the designated format such that analyses of land use pattern can be carried out.

A number of actual GIS applications for natural resources management has been carried out. Some of the completed studies are:

1. Selection of suitable areas for eucalyptus reforestation. (as referred to earlier).
2. Selection of land reform area in Chantaburi province.
3. Selection of potential intensive black tiger prawn sites along the coast in Songkla province.

At present, the database of NRE contains physical information on about 13 per cent of the total land area of the country, or 40 million rai. This information is made available, upon request, both to governmental agencies and the private sector.

VI. Research in Progress

Current research is expanded into four areas:-

Mineral Resources Development

While the mineral industry is an important sector in the Thai economy, generating foreign exchange and providing direct and secondary employment, there has never been a well-defined mineral resource development policy. Historically, this need is particularly felt since the industry has undergone several dramatic changes, from the tin price collapse in 1985 to the general downturn in the market prices of several key export minerals such as fluorite, barite, gypsum, tantalum, tungsten, lead, and antimony.

NRE is therefore undertaking a study to formulate an action plan for the mineral industry. This study, initiated upon the request of the Mining Council of Thailand and the Mineral Resources Development will involve the private and public sectors in evolving a coordinated plan to develop appropriate mineral exploitation practices, mitigate environmental complications, and encourage mineral conservation.

The purposes of the action plan are:

1. To establish concepts and criteria for assessment of mineral resources of the country.

2. To rank the priority of the minerals that are important to the economy and should be developed. The priority will be placed at the following orders:

   - o minerals that can be used as inputs for various downstream industries in the country;
   - o minerals that can be produced for import-substitution;
   - o minerals that can be processed to finished or semi-finished products for export,

3. To coordinate the development of mineral resources with that of other natural resources, such as forestry and water,

4. To formulate a well-designed strategy for mineral resource management,

5. To propose policy guidelines to the government for the development of the mineral sector.

It is expected that the results of this study will serve as the bases for mineral resources development in the 7th Economic and Social Development Plan.

Industrial Estate Siting

The economy of Thailand has shifted significantly from an agriculture base to an industrial base during the last decade. Lately, investment in setting up new industrial estates has proved to be a profitable venture. The Ministry of Industry, thus, is interested in identifying new sites for industrial estate development, with due consideration to environmental factors.

Two districts of Samutprakarn Province, namely, Amphoe Bangplee and Amphoe Bangbo, are under study. Economic yields generated from current agricultural activities in these districts will be investigated to compare with income generated from planned industrial activities. Physical screening for the proper industrial zone will be done based on selected infrastructure and environmental criteria. Data capture and analysis will be done by applying GIS. The objective is to review the existing land use zoning to accommodate more industrial development.

GIS Users Conference

The use of geographic information system technology in natural resources and environmental management is spreading. Several RTG agencies have now acquired this technology and are beginning to apply it. It is clear from informal contacts with other users that there is a need for a strong linkage among GIS users to share experiences and to set a rational policy for its use. With this in mind a GIS users conference is planned for early November, 1989. The tentative venue is Bangkok. The purpose of this meeting, hosted by NRE, is to establish links among the various GIS users in Thailand as well as promote meaningful dialog between the technical practioners of GIS and the key policy decision-makers within the Thai government. To this end, all the leading GIS users and potential users in Thailand will be invited, as well as the members of the National Committee on GIS. Potential private sector users will also be invited to promote the use of information in the management of

natural resources within the private sector. It is expected that about 100 participants will attend this conference. The potential links between GIS and remote sensing and the governmental policy on Data Processing Zone (DPZ) will also be explored at this meeting.

In the field of GIS, NRE will continue to expand its database. The idea is to link up with other users so that spatial digitized data can be shared by both Government and the private sector alike.

Natural Resources Management

In the past few years, NRE has completed a series of major studies related to natural resources management, namely Land Policy Study, Land Reform Policy Study and Economic Forest. From these three studies, the linkages between land and forest clearly emerge. To be able to alleviate the poverty of millions of poor farmers who had to encroach into forest reserves and rely only on subsistant farming, development strategies must recognize the issues of land and forest as one and inseparable.

In the 2nd year of this on-going project, NRE will emphasize 2 areas related to natural resources management:

1. The projection of the status of Thailand's natural resources upto the Year 2010. Such projection will attempt to analyse the population and migration trends in the rural areas, the expanding economic development particularly the trends in agricultural development.

Finally the impact on the requirements for more land will be analyzed.

2. The increasing role of the private sector in agricultural development in encroached forest reserves. Is it really feasible to expect the private sector to invest in degraded areas? What will be the impact to the "economic forest" policy of the Government in the long run?

VII. Concluding Remarks

The funding support under EPD II has enabled NRE to expand its database on natural resources as well as to conduct various studies as described earlier to explore the role of the private sector in both natural resources development and environmental quality management. Such studies have not been undertaken elsewhere due to the prevailing thinking that Government has the eminent and leading role in dealing with "common property" issues such as natural resources or environment. On the other hand, it is in vogue, nowadays, to pass the responsibility to the private sector as the potential savior whenever it is felt that a national issue is beyond the resources at the disposal of the Government. It is our believe that our contribution would shed some light to the appropriate role that can be expected from the private sector in this important area of natural resources and environment.

Two additional points should be added here. Firstly, this project was designed to fit snugly with the upcoming NRE research activities under the MANRES project. Due to the continuing nature of our research, it was designed in such a way that all activities, if necessary, will be carried over into the MANRES project, while maintaining the amount of output, in terms of reports, to be prepared at six-month intervals as stipulated in the EPD II project. In addition, under MANRES, new projects such as the preparation of Thailand Natural Resources Profile II and the study of the impact of global climate change to Thailand will be initiated.

Secondly, it should be emphasized that results of the present project under EPD II will contribute to the Project Thailand 2010 of TDRI. Without knowing the present possibilities, it certainly is not possible to project into the future. In addition, NRE will benefit more and more from its interactions with the research of the other programs of TDRI, and vice versa. Thailand 2010 Project will be the opportunity where the studies of various subjects can be integrated together such as natural resources, agricultural development and population, or environmental quality, industrialization and energy. This will add to the multiplying effects of the overall work of TDRI.

List of Reports and Papers Prepared Under EPD II Project

Economic Forest : Myth or Reality

Employment and Income Generation from reforestation

An Application of Geographic Information System (GIS) in Identifying Appropriate Areas for Fast-growing Tree Plantations

Identification of Potential Land Reform Areas in Chanthaburi Province : Final Results, Vol.I : Main Report

Identification of Potential Land Reform Areas in Chanthaburi Province : Final Results, Vol.II : Map Book

Siting Industrial Waste Land Disposal Facilities in Thailand : A Risk Based Approach

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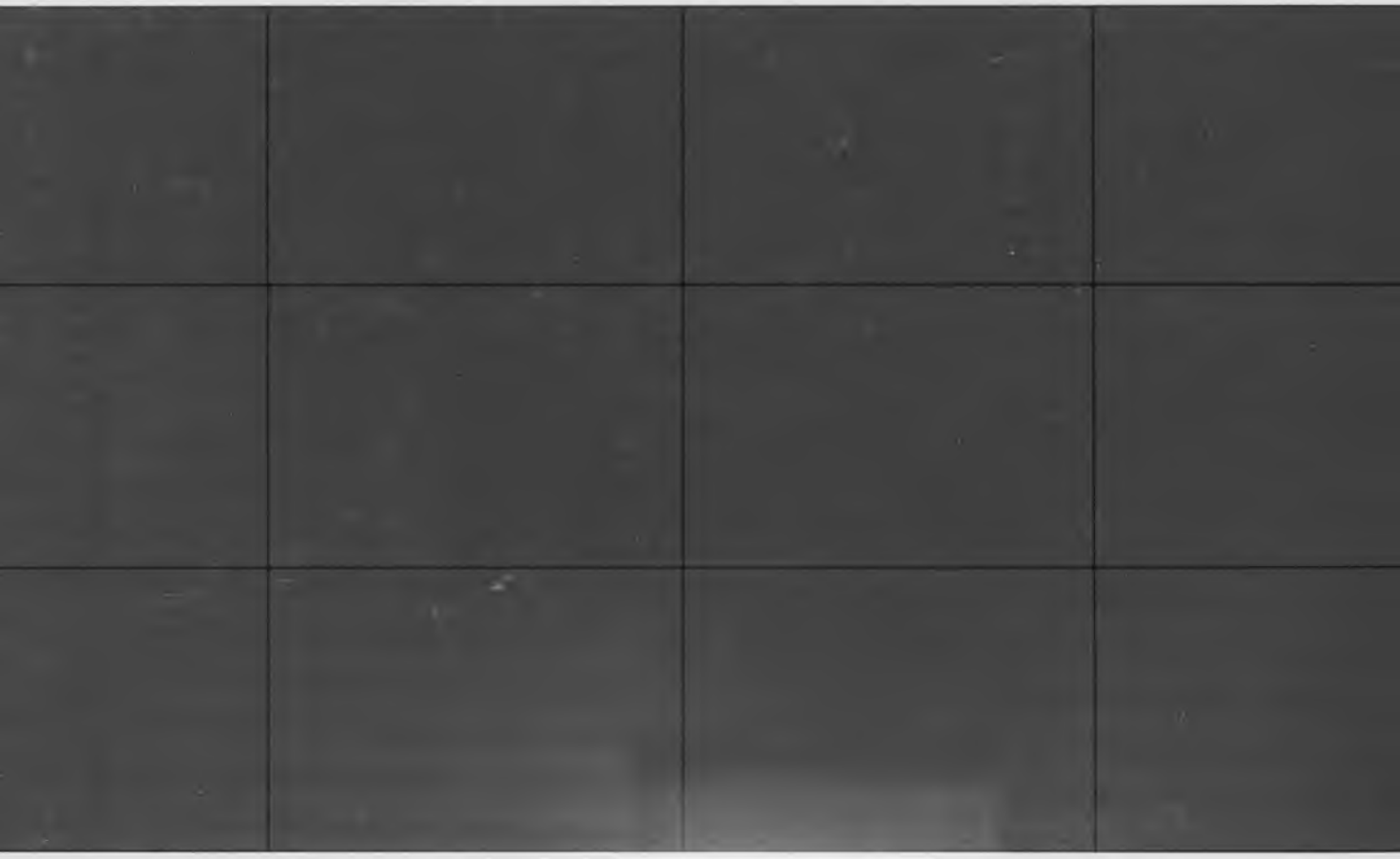

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